

CLAIMS

What is claimed is:

1. A method for predicting and applying painting parameters so that predetermined painting responses are produced, said method comprising:
 - 5 a. preparing a painting parameter-response model, said model interrelating at least one painting parameter with at least one painting response via a painting parameter-response algorithm;
 - b. predetermining at least one painting parameter to input into said parameter-response algorithm of said model;
 - 10 c. determining at least one target painting response based upon said parameter-response algorithm of said model and upon said parameter or plurality of parameters; and
 - d. applying any said parameter or plurality of parameters to the painting equipment in such way as to obtain said painting response or plurality of painting responses.
2. A method for predicting and applying painting parameters so that predetermined painting responses are produced, said method comprising:
 - 20 a. preparing a painting parameter-response model, said model interrelating at least one painting parameter with at least one painting response via a painting parameter-response algorithm;
 - b. predetermining at least one target painting response to input into said parameter-response algorithm of said model;
 - 25 c. determining at least one painting parameter based upon said parameter-response algorithm of said model and upon said response or plurality of responses; and
 - d. applying any said parameter or plurality of parameters to the painting equipment in such way as to obtain said painting response or plurality of painting responses.
- 30 3. The method of claim 1 or 2 wherein said painting parameter-response model is based upon a design of experiments interrelating said painting parameters with said painting response.

4. The method of claim 1 or 2 wherein said painting parameter-response model includes interrelating a plurality of painting parameters with a plurality of painting responses.

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5. The method of claim 1 or 2 which includes a computer-human interface for inputting said painting response, inputting permissible level ranges for said painting parameters, and determining painting parameters.

10 6. The method of claim 1 or 2 wherein said plurality of paint responses comprise spray pattern diameter and average spray pattern film build

7. The method of claim 6 which further comprises spray pattern shape as a paint response.

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8. The method of claim 7 which further comprises transfer efficiency as a paint response.

9. The use of the method of claim 1 to determine painting parameters.

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10. The use of the method of claim 1 to determine initial setpoints for painting parameters.

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11. The use of the method of claim 1 to compare paint application equipment or equipment components.